

**PRESENTATION OF CLAIMS**

Please replace all prior claims in the present application with the following claims, in which no claims are amended, canceled, withdrawn, or newly presented.

1. (Previously Presented) A method for accessing an instance of a recreatable object in a shorter-duration memory based on a reference located in a longer-duration memory, wherein the shorter-duration memory is associated with a call, the method comprising the steps of:

locating, within the shorter-duration memory, a context structure associated with the call;

locating an XREF pointers array based on data cached within the context structure;

determining whether the XREF pointers array includes a pointer associated with said reference located in the longer-duration memory; and

if the XREF pointers array includes a pointer associated with said reference located in the longer-duration memory, then following said pointer to locate said instance within said shorter-duration memory.

2. (Previously Presented) The method of Claim 1 wherein the step of locating an XREF pointers array based on data cached within the context structure comprises the steps of:

determining a hash code associated with a memory page in which the reference located in the longer-duration memory is located;

using at least a portion of the hash code as an index to locate an array entry within an array stored within the context structure; and

if said array entry contains a pointer, then following said pointer stored in said array entry to locate said XREF pointers array.

3. (Original) The method of Claim 2 wherein:

the array is a power-of-two array; and

the portion of said hash code that is used as said index includes a particular number of bits of said hash code.

4. (Original) The method of Claim 1 wherein:

the XREF pointers array does not include a pointer associated with said reference; and

the method further comprises the steps of

creating said instance by activating said recreatable object; and

storing a pointer to said instance in said XREF pointers array.

5. (Original) The method of Claim 2 wherein:

if said array entry does not contain a pointer, then creating said instance by activating said recreatable object; and

storing a pointer to said instance in said array entry.

6. (Previously Presented) A method for accessing an instance of a recreatable object in shorter-duration memory based on a reference located in a longer-duration memory, wherein the shorter-duration memory is associated with a call, the method comprising the steps of:

when a class is activated, generating, within said shorter-duration memory, a class object associated with the class;

storing, within said class object, data for locating instances of recreatable objects associated with said class;

to dereference said reference located in the longer-duration memory, performing the steps of

determining that said reference located in a longer-duration memory is associated with said class; and  
using said data within said class object to locate said instance of said recreatable object.

7. (Original) The method of Claim 6 wherein the step of storing, within said class object, data for locating instances is performed by storing, within said class object, a pointer to an XREF pointers array.

8. (Original) The method of Claim 7 wherein the step of using said data within object to locate said instance includes the steps of:

determining whether the XREF pointers array includes a pointer associated with said reference;  
if the XREF pointers array includes a pointer associated with said reference, then following said pointer to locate said instance within said shorter-duration memory.

9. (Original) The method of Claim 8 wherein:

the XREF pointers array does not include a pointer associated with said reference; and  
the method further comprises the steps of  
creating said instance by activating said recreatable object; and  
storing a pointer to said instance in said XREF pointers array.

10. (Previously Presented) A computer-readable medium carrying instructions for accessing an instance of a recreatable object in a shorter-duration memory based on a reference located in a

longer-duration memory, wherein the shorter-duration memory is associated with a call, the computer-readable medium comprising instructions for performing the steps of:

- locating, within the shorter-duration memory, a context structure associated with the call;
- locating an XREF pointers array based on data cached within the context structure;
- determining whether the XREF pointers array includes a pointer associated with said reference located in the longer-duration memory; and
- if the XREF pointers array includes a pointer associated with said reference located in the longer-duration memory, then following said pointer to locate said instance within said shorter-duration memory.

11. (Previously Presented) The computer-readable medium of Claim 10 wherein the step of locating an XREF pointers array based on data cached within the context structure comprises the steps of:

- determining a hash code associated with a memory page in which the reference located in the longer-duration memory is located;
- using at least a portion of the hash code as an index to locate an array entry within an array stored within the context structure; and
- if said array entry contains a pointer, then following said pointer stored in said array entry to locate said XREF pointers array.

12. (Original) The computer-readable medium of Claim 11 wherein:

- the array is a power-of-two array; and
- the portion of said hash code that is used as said index includes a particular number of bits of said hash code.

13. (Original) The computer-readable medium of Claim 10 wherein:

the XREF pointers array does not include a pointer associated with said reference; and  
the computer-readable medium further comprises instructions for performing the steps of  
creating said instance by activating said recreatable object; and  
storing a pointer to said instance in said XREF pointers array.

14. (Original) The computer-readable medium of Claim 11 further comprising instructions  
for performing the steps of:

if said array entry does not contain a pointer, then creating said instance by activating said  
recreatable object; and  
storing a pointer to said instance in said array entry.

15. (Previously Presented) A computer-readable medium carrying instructions for accessing  
an instance of a recreatable object in shorter-duration memory based on a reference located in a  
longer-duration memory, wherein the shorter-duration memory is associated with a call, the  
computer-readable medium comprising instructions for performing the steps of:

when a class is activated, generating, within said shorter-duration memory, a class object  
associated with the class;  
storing, within said class object, data for locating instances of recreatable objects associated  
with said class;  
to dereference said reference located in the longer-duration memory, performing the steps of  
determining that said reference located in the longer-duration memory is associated with  
said class; and  
using said data within said class object to locate said instance of said recreatable object.

16. (Original) The computer-readable medium of Claim 15 wherein the step of storing, within said class object, data for locating instances is performed by storing, within said class object, a pointer to an XREF pointers array.

17. (Original) The computer-readable medium of Claim 16 wherein the step of using said data within object to locate said instance includes the steps of:

determining whether the XREF pointers array includes a pointer associated with said reference;

if the XREF pointers array includes a pointer associated with said reference, then following said pointer to locate said instance within said shorter-duration memory.

18. (Original) The computer-readable medium of Claim 17 wherein:

the XREF pointers array does not include a pointer associated with said reference; and

the computer-readable medium further comprises instructions for performing the steps of creating said instance by activating said recreatable object; and

storing a pointer to said instance in said XREF pointers array.

19. (Previously Presented) The method of Claim 1 wherein the duration of the shorter-duration memory is shorter than the duration of the longer-duration memory.

20. (Previously Presented) The computer-readable medium of Claim 10 wherein the duration of the shorter-duration memory is shorter than the duration of the longer-duration memory.